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A NEW CARIBBEAN CORAL OF THE GENUS CHRYSOGORGIA

By Frederick M. Bayer

The cruises of the United States Fish Commission steamer *Albatross* in the western Atlantic Ocean yielded many interesting species of alcyonarian corals, many of which are still to be studied. Among these is a most unusual chrysogorgid from the Caribbean Sea, quite unlike anything previously recorded from that area, or indeed from any other.

CHRYSOGORGIA ELISABETHAE, new species

FIGURES 56, 57; PLATE 9

The colony is small, 65 mm. in height and 45 mm. in spread, attached by a small, white calcareous basal disk to a shell of the mollusk *Tugurium caribaeum* (Petit). The main stem of the colony makes a sudden change in direction at a point 6.5 mm. from the base, at the first branch origin; beyond this point its direction remains unchanged, giving off branches in a right-handed spiral that approximates the 2/5 arrangement. The branches arise at close intervals, the stem internodes being approximately 2 mm. long. The branches subdivide dichotomously as many as eight times, in various planes, so that the colony is quite bushy. The internodes of the branches are 4–5 mm. long except the distal one, which may be shorter. The main stem is about 1 mm. in diameter, the branches about 0.75 mm. in the first internode and 0.5 in the third. Each branch internode bears a single zooid, and none is present on the stem. Nematozooids appear to be lacking. The axis of the alcoholic type is brown near the base, paling

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to straw yellow in the branches, where there is a greenish-golden iridescence; zooids white.

The zooids are subclavate, about 1 mm. in height by 0.65—0.75 mm. in diameter, directed distally to a slight degree. Those in the older parts of the colony have a pronounced asymmetrical basal swelling containing gonads. The body of the zooid is covered by a layer of long, sometimes flattened, rather pointed rods transversely arranged and strongly bent to conform with the curvature of the body. Many of these have on the upper or lower margin one or more pronounced lobes or spines, which project outward from the body of the zooid, giving it a decidedly spinose appearance, or imbricate with the adjacent spicules. The rods tend to be flatter distally in the zooid body, and immediately beneath the tentacles may consist of three flat, pointed lobes, the middle one lying along the tentacle back, the lateral ones conforming with the transverse spicules below. The tentacles themselves usually have proximally one or two pairs of longitudinally disposed, irregular flattened sclerites rudely *en chevron* arrangement, usually followed distally by two or three rows of longitudinally placed spicules, each row consisting of one or more long, flattened, somewhat granular rods. Beyond these, toward the tip, the small, elongate, irregular scales lie crosswise. The pinnules contain small, blunt-ended, flattened rods.

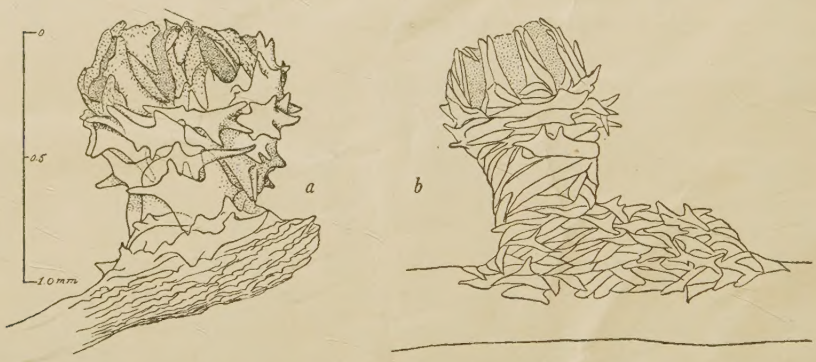

FIGURE 56.—*Chrysogorgia elisabethae*, new species: *a*, A fully developed terminal zooid from one of the lower branches; *b*, a zooid with basal swelling containing gonads, taken from one of the proximal internodes.

The coenenchyma is thin and easily rubbed off; it contains elongate spinous rods and crosses, for the most part lying lengthwise of the axis.

Some of the irregular body spicules measure as follows in maximum length and width (mm.): 0.6 by 0.25; 0.55 by 0.35; 0.55 by 0.15; 0.45 by 0.15. From the tentacle bases: 0.35 by 0.05; 0.35 by 0.06; 0.23 by 0.05. From the distal part of the tentacle: 0.18 by 0.07; 0.09 by 0.02. From the coenenchyma: 0.4 by 0.07; 0.41 by 0.08; 0.34 by 0.07.

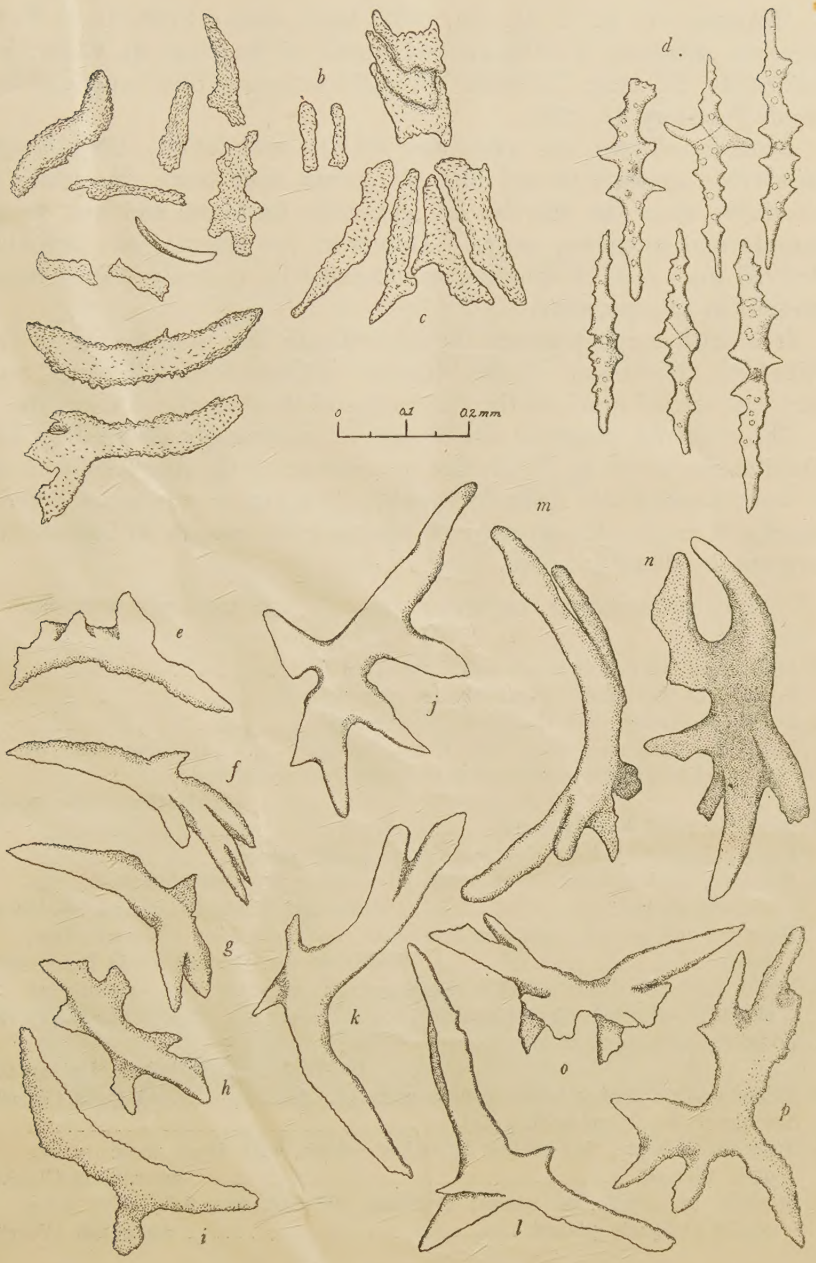

FIGURE 57.—*Chrysogorgia elisabethae*, new species: *a*, Spicules of the tentacles: large irregular spindles from the base, smaller scales from the distal end; *b*, flattish scales of the pinnules; *c*, spicules from proximal part of the tentacle separated to show arrangement; *d*, spicules of the coenenchyme; *e–i*, spiniferous rods from a young zooid; *j–p*, spiniferous and branched rods and plates from a fully developed zooid; *m*, *n*, two views of the same plate.

Holotype.—U. S. N. M. No. 7552, from station 2129, U. S. F. C. steamer *Albatross;* Caribbean Sea, south of Santiago de Cuba; lat. 19°56′04″ N., long. 75°48′55″ W.; 274 fathoms; blue mud and fine sand; February 27, 1884.

Remarks.—From the character of its spiculation, *Chrysogorgia elisabethae* appears to fall into the group *Squamosae Aberrantes* of Versluys, since the spicules are generally flattened and are, to all intents and purposes, scales. However, the spicules are probably derived from rods or spindles, as indicated by underdeveloped forms present in young zooids.

It is with much pleasure that I dedicate this new species to Dr. Elisabeth Deichmann, of the Museum of Comparative Zoology, who has contributed much to the knowledge of the Atlantic Alcyonaria.

The genus *Chrysogorgia* has been most adequately covered by Dr. Deichmann (1936, p. 227) in her monograph of the Alcyonaria of the western part of the Atlantic Ocean. The key to the species given therein is excellent, and need be altered only enough to include the new species described here.

KEY TO THE OF SPECIES OF CHRYSOGORGIA KNOWN FROM THE WESTERN ATLANTIC

1. Spicules of the zooids transversely arranged 2
   Spicules of the zooids longitudinally arranged 6
2. Zooid spicules as pointed, curved, simple rods 3
   Zooid spicules as curved, sometimes flattened rods with spinelike or branchlike processes projecting outward from zooid body. **elisabethae**, new species
3. Branches rigid, bent upward 4
   Branches not especially rigid, almost vertically placed 5
4. Branches tend to ramify in one plane, becoming flabellate; internodes numerous, short ..... **desbonni** Duchassaing and Michelotti
   Branches not predominately in one plane, nor flabellate; internodes few, longer ..... **desbonni** var. **thyrsiformis** Deichmann
5. Zooid spicules delicate, with small warts; coenenchyma spicules as short, simple rods, almost smooth ..... **fewkesi** (Verrill)
   Zooid spicules stouter; coenenchyma spicules spinose. **fewkesi** var. **multiflora** Deichmann
6. Spicules as pointed or blunt spinous rods ..... **elegans** (Verrill)
   Spicules as flat, blunt ending plates 7
7. Spicules as large, flat scales; branches robust, with large zooids vertically placed ..... **squamata** (Verrill)
   Spicules as small, flat scales; branches delicate, hair-fine, with long zooids obliquely placed ..... **agassizii** (Verrill)

CHRYSOGORGIA ELISABETHAE, NEW SPECIES: THE HOLOTYPE.

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